



PTO/SB/08A (10-01)

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Substitute for form 1449A/PTO			<b>Complete if Known</b>		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			Application Number	10/618,269 10/18/28V	
			Filing Date	July 9, 2003	
			First Named Inventor	Sorrells, Martin	
			Art Unit	2954	
			Examiner Name	Les Hinz	
Sheet	01	of	10	Attorney Docket Number	AES 03-002

U.S. PATENT DOCUMENTS					
Examiner Initials <sup>5</sup>	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
JH	1	us-5,555,220	09-10-1996	Minto, James	— — — — — — — — — — — — — —
		us-5,585,556	12-17-1996	Petersen, et al.	
		us-5,842,149	11-24-1998	Harrell et al.	
		us-6,023,444	02-08-2000	Naville, et al.	
		us-6,308,137B1	10-23-2001	Underhill et al.	
		us-6,382,332B1	05-07-2002	Eaton, Michael	
		US002/0060952A1	05-23-2002	Cecconi et al.	
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FOREIGN PATENT DOCUMENTS						
Examiner Initials <sup>5</sup>	Cite No. <sup>1</sup>	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>6</sup> (if known)				
JH	1	EP0716319A2		06-12-1996	Petersen & Heggernes	— — —
		EP1002934A2		05-24-2000	Eaton, Michael	
		WO98/17894		04-30-1998	MacDonald et al.	

Examiner Signature	JH 7. Hinz	Date Considered	10/26/05
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<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/618,282
		Filing Date	July 9, 2003
		First Named Inventor	Sorrells, Martin
		Group Art Unit	
		Examiner Name	
Sheet	02	of	10
		Attorney Docket Number	AES 03-002

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
7/4		Raymond L. Filler, The Acceleration Sensitivity of quartz Crystal Oscillators: A Review IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control Vol 35, No. 3, May 1988	
		R.C. Smythe, Acceleration Effects in Crystal Filters: A Tutorial IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control Vol 39, No. 3, May 1992	
		Roger W. Ward, The Constants of Alpha Quartz 14th Piezoelectric Devices Conference and Exhibits, September 15-17, 1992	
		John R. Vig, Introduction to Quartz Frequency Standards Army Reserach Laboratory; SLCET-TR-91-1 (Rev. 1), October, 1992	
		Arthur Ballato, Piezoelectricity: Venerable Effect, Modern Thrusts Army Research Laboratory; ARL-TR-70, August, 1994	
		Arthur Ballato, Doubly Rotated Thickness Mode Plate Vibrators US Army Electronics Technology & Devices Laboratory (reprinted from Physical Acoustics Vol XIII, 1977, Academic Press Inc.)	
		John R. Vig, and Thrygve R. Meeker, The Aging of Bulk Acoustic Wave Resonators, Filters and Oscillators; US Army Communications-Electronics Command, 45th Annual Symposium on Frequency Control, pp. 77-101, 1991	
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		Colin K. Campbell, Applications of Surface Acoustic and Shallow Bulk Acoustic Wave Devices, Proceedings of the IEEE, Vol. 77, No. 10, October 1989	

Examiner Signature	<i>Leo T. Tj...</i>	Date Considered	10/26/05
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		First Named Inventor	Sorrells, Martin		
		Group Art Unit			
		Examiner Name			
Sheet	03	of	10	Attorney Docket Number	AES 03-002

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DA		George Kamas and Sandra Howe, Coordinated Universal Time (UTC) and Leap Second Time and Frequency Users Manual, NBS Special Publication 559, Chapter 2, Section 2.1, November 1979 (updated May 1997)	
		W. J. Riley, The Calculation of Time Domain Frequency Stability - a revised version of these 2 papers: A Test Suite for the Calculation of Time Domain Frequency Stability, Proc. 1995 IEEE Freq. Contrl. Symp., pp. 360-366, June 1995 and Addendum to a Test Suite for the Calculation of Time Domain Frequency Stability, Proc. 1996 IEEE Freq. Contrl. Symp., pp. 880-882, June 1996.	
		John R. Vig and Arthur Ballato, Frequency Control Devices, reprints from Ultrasonic Instruments and Devices 1999, Academic Press, Inc. pp 637 - 701	
		Errol P. EerNisse, Quartz Crystals vs. Their Environment: Time Bases or Sensors?: Tutorials, IEEE, Frequency Control Reference and Tutorial Information	
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		Leonhard M. Reindl, Wireless Passive SAW Identification Marks and Sensors; A Tutorial 2002 IEEE International Frequency Control Symposium Tutorials, New Orleans, June 1, 2002.	
		John R. Vig; Quartz Crystal Resonators and Oscillators; A Tutorial 2002 IEEE International Frequency Control Symposium Tutorials, New Orleans, June 1, 2002.	
		Michael M. Driscoll; Low Noise Oscillator Design and Performance: A Tutorial 2002 IEEE International Frequency Control Symposium Tutorials, New Orleans, June 1, 2002.	
		Jeremy K. Everard; The Fundamental Theory of Low Noise Oscillators with Special Reference to Some Detailed Designs; A Tutorial IEEE Frequency Control Symposium Tutorial, Kansas City, June 6th 2000	
		Leonard S. Cutler; Passive Atomic Frequency Standards: A Tutorial 2002 IEEE International Frequency Control Symposium Tutorials, New Orleans, June 1, 2002.	

Examiner Signature	Leo T. H3	Date Considered	10/26/05
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		Filing Date	July 9, 2003		
		First Named Inventor	Sorrells, Martin		
		Group Art Unit			
		Examiner Name			
Sheet	04	of	10	Attorney Docket Number	AES 03-002

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
JEA		W. J. Riley; Rubidium Frequency Standard Technology: A Tutorial PTTI 2002 Tutorial, Reston, VA December 2, 2002	
		Lute Maleki; Advanced Atomic Clocks; A Tutorial 2000 IEEE International Frequency Control Symposium Tutorials, Kansas City June 6, 2000	
		X. Steve Yao; Photonic Techniques for Frequency and Timing: A Tutorial 2000 IEEE International Frequency Control Symposium Tutorials, Kansas City June 6, 2000	
		G. John Dick; Sapphire Microwave Frequency Sources; A Tutorial 2002 IEEE International Frequency Control Symposium Tutorials, New Orleans, June 1, 2002.	
		Eva S. Ferre-Pikal; PM and AM Noise Measurement Techniques - Part I: A Tutorial 2002 IEEE International Frequency Control Symposium Tutorials, New Orleans, June 1, 2002.	
		Craig Nelson; PM & AM Noise II: A Tutorial 2002 IEEE International Frequency Control Symposium Tutorials, New Orleans, June 1, 2002.	
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		Don Percival; An Introduction to the Wavelet Analysis of Time Series; A Tutorial 2000 IEEE International Frequency Control Symposium Tutorials, Kansas City June 6, 2000	
		Venceslav F. Kroupa; Principles of Phase Locked Loops (PLL): A Tutorial 2000 IEEE International Frequency Control Symposium Tutorials, Kansas City June 6, 2000	
		Bob Temple; Clock Jitter - Jitter Estimation from Frequency Domain Measurements: A Tutorial. 2000 IEEE International Frequency Control Symposium Tutorials, Kansas City June 6, 2000	
		Thomas E. Parker; Introduction to Time and Frequency Transfer: A Tutorial 2002 IEEE International Frequency Control Symposium Tutorials, New Orleans, June 1, 2002.	

Examiner Signature	JEA	Date Considered	10/26/05
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		Application Number	10/618,282		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Filing Date	July 9, 2003		
		First Named Inventor	Sorrells, Martin		
		Group Art Unit			
		Examiner Name			
Sheet	05	of	10	Attorney Docket Number	AES 03-002

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-Issue number(s), publisher, city and/or country where published	T <sup>2</sup>
[Handwritten signature]		Samuel R. Stein; Digital Measurement of Precision Oscillators; A Tutorial IEEE, Frequency Control Reference and Tutorial Information website	
		D.A. Howe, D.W. Allan, and J.A. Barnes; Properties of Oscillator Signals and Measurement Methods; A Tutorial. IEEE, Frequency Control Reference and Tutorial Information website.	
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		Dan Russell; Acoustics and Vibration Animations; A Tutorial IEEE, Frequency Control Reference and Tutorial Information website	
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		Arthur Ballato; Transmission-Line Analogs for Piezoelectric Layered Structures: A Ph.D. Dissertations; IEEE, Frequency Control Reference and Tutorial Information website	
		Angela M. Slocum; Basic Oscillators 101 - A Guide to Specifying Timing Devices: A Tutorial. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		Mike F. Wacker; Frequency Stability Characterization in the Time Domain: A Tutorial Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
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		David Chandler; Phase Jitter - Phase Noise and Voltage Controlled Crystal Oscillators: A Tutorial. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
	David R. Shaner; Precision Frequency Measurment: A Tutorial Corning Frequency Control January 5, 1998: IEEE, Frequency Control Reference and Tutorial Information website		

Examiner Signature	[Handwritten Signature]	Date Considered	10/26/05
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JFH		Dan Nehring; Specifying OCXOs for Base Stations; A Tutorial Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		William P. Hanson and Timothy E Wickard; Acceleration Sensitivity as a Function of Temperature: A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		Lynn C. Heishman; Application Notes for Doubly Rotated Quartz Crystals: A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		Calibration of Time Base Oscillators; A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		Timothy E. Wickard and Willima P. Hanson; The Complication of Helium Desorption in the Helium Leak Method. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		Greg L. Weaver; The Use of a Computer Model to Determine the Complex Parametric Relationships of a Crystal Oscillator Circuit. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
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		Bruce R. Long; Frequency Correlation of Quartz Crystal Oscillators; A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website (first presented at the RF Expo East, 1990).	
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		G. Weaver, W/ Hanson & T. Wickard; A Insitu technique for the Resolution of Aging Contributions Between Quartz Resonators and Oscillator Circuits. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		W.P. Hanson, T.R. Meeker & L.C. Heishman; A New Factor Affecting the Acceleration Sensitivity of the Resonance Frequency of Quartz Crystal Resonators. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	

Examiner Signature	<i>Leo J. Hickey</i>	Date Considered	<i>10/26/05</i>
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LJA		N. Bates and G. Weaver; Phase Noise Frequency Distributions of SC and AT Quartz Crystal Resonators. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		G. Kurzenknabe; Practical Considerations in Specifications of High Stability Crystal Oscillators. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		W. Hanson; Proble Ion Signature in Quartz Electrodiffusion Data. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		B. Long; Quartz Crystals and Oscillators. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		B. Long and G. Weaver; Quartz Crystal Oscillators with Direct Resonator Heating. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		L. Heishman, A Review of Progress Related to Doubly Rotated Crystals. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
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		G. Kurzenknabe; Vibrational Sensitivity and Phase Noise in Crystal Oscillators. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		V. Bottom; A History of the Quartz Crystal Industry in the USA. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		D. Chandler; A Statistical Analysis of Temperature Dependent Time Domain Phase Jitter. (MC061A1 series Bulk Acoustic Wave Quartz Crystal Oscillators). A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		C. Jensik, R. Zellers & R. Lackey; A Synopsis of Quality Involvement/Improvement Programs and the Ramifications on our Industry. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	

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SJA		P. Brown; The Influence of Amateur Radio on the Development of the Commercial Market for Quartz Piezoelectric Resonators in the United States. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		H. Fanus; The Quartz Crystal Industry in Carlisle, PA. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		I. Albright; The Effect of Temperature on Crystal Oscillators. A Technical Paper. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		Branching out Through Band Width; Specialists in Successful Risk Analysis; and Promising Developments from a 'Virtual Drug Company'. Oak Industries Inc. featured on 'Business Now' at 9 AM Sunday, September 12, on WCVB-TV (www.batv.com).	
		A Brief History of Corning Frequency Control. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
		McCoy Electronics Photographs from the OFC Archives. Corning Frequency Control: IEEE, Frequency Control Reference and Tutorial Information website	
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Examiner Signature	<i>Leo J. Hily</i>	Date Considered	10/26/05
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/618,282		
		Filing Date	July 9, 2003		
		First Named Inventor	Sorrells, Martin		
		Group Art Unit			
		Examiner Name			
Sheet	09	of	10	Attorney Docket Number	AES 03-002

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
LJA		I. Abramzon & R. Boroditsky; Thermodynamic Aspect of Short-Term Frequency Stability of Directly Heated Resonators. A Technical Paper. Valpey Fisher Corporation. Resource Center website.	
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		Training Session - Crystal Specifications. A Power Point presentation. Valpey Fisher Corporation. Resource Center website.	
		Training Session - Frequency Tolerance. A Power Point presentation. Valpey Fisher Corporation. Resource Center website.	

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